# CONSTRUCTION

# HINTS

UNITED STATES DEPARTMENT OF AGRICULTURE, FOREST SERVICE

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## HOSE BREAKAGE ON TRAILBUILDERS

Contributed by Division of Engineering - Region 1

We have not been able to eliminate this breakage entirely but have cut it down materially. We first set the oil pressure at not to exceed 350 pounds and have made up a gauge so we can determine the pump pressure accurately. In checking the oil pressure as set by the factory, we found they ran up as high as 600 pounds. We now find that the trailbuilder will operate satisfactorily with pressure as low as 300 pounds and that the operators who use the low pressure have little or no hose or valve trouble.

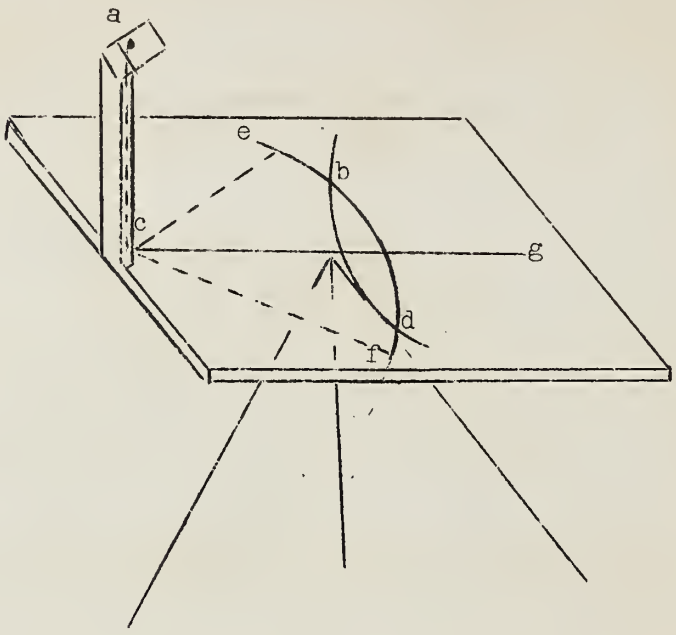
We have made several different hook-ups with gauges, but so far the best we have been able to develop is a standard air gauge reading up to 400 pounds with reducers on it to fit into the pipe plug hole on the top of the cylinder head. To keep down vibration on the needle so an accurate reading can be obtained, we found it necessary to use a pipe nipple four inches long on the gauge and solder the end shut leaving a hole about the size of a horse hair; in fact, a horse hair is best to solder around as the solder does not stick to it and after the job is done it can easily be pulled out.

When we received the 1935 trailbuilders some of the hoses seemed to be short and either pulled out of the connection or chafed badly around the corner of the battery box on one side and the oil tank bracket on the other. This was found to be caused by poor adjustment of nipple #T672 and nut #T673, items 107 and 108 in the catalogue. By loosening the nut on the bracket and crowding the steel tubing ahead, we were able to get enough slack in the hoses.

(Over)

## TO GET A TRUE MERIDIAN WITH A PLANE TABLE

Contributed by J. A. Cary, District Ranger,
Shasta National Forest.




On a level table attach a post 18" to 24" long, 18" for short winter days, 24" for longer summer days, at the top of the post attach a piece of tin or brass having in it a hole "a". For about half an hour before and after noon, by watch or standard time, mark at intervals of 10 minutes the position of the spot of sunlight from "a" on the plane table. Connect these points thus plotted forming the curve "bd". From "c" on the table immediately below the hole "a", located with a plumb-bob, strike a circular arc "ef", with any radius, intersecting the curve "bd" at "b" and "d", near the edges of the board. Draw line "cg" bisecting the circular arc "bd". The line "cg" will be the true meridian. This method will be as accurate as a compass can be read and from the meridian the declination of the compass can be determined.

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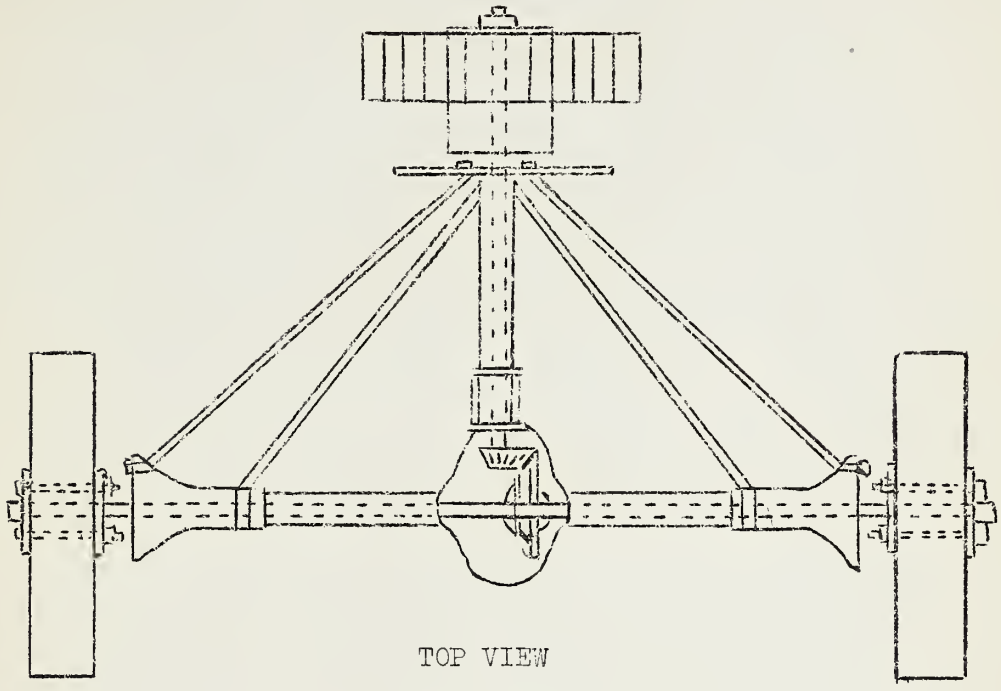
A number of the Regions seem to be having considerable trouble with paper gaskets furnished by the manufacturers of tractors. The gaskets become softened by oil and then squeeze over and fill up the oil passage to the wheel bearing. Mr. G. W. Duncan of Region 1 has solved this difficulty by having special copper gaskets made and installed on the tractors in his Region. For the Cletrac "55" the gasket part number is 41013.

POWER DRIVEN GRINDSTONE

Located at Camp 84-S, Region 9



TOP VIEW

Spider gear in the Model "T" Ford rear end has to be bolted to make both stones turn in the same direction.

## SOIL STABILIZATION

Considerable study is being made by the Division of Engineering in Washington on the subject of Soil Stabilization in connection with Forest Service roads. Changing the grading to increase stability is the oldest known method of road improvement. The use of special stabilizing substances in connection with the correct combination of road materials is of more recent origin.

The first step in building stabilized road surfaces is the arrangement of the most stable combination of available materials. The second step is the provision of the greatest degree of permanency possible by means of mechanical consolidation and the use of admixtures or waterproof coverings or both.

A further discussion of this subject will continue in later issues.

H. L. Friend - EDITOR.